

**Claims**

1. A polymerizable adhesive or filling composition  
5 for large assemblies comprising from about 5 to about  
75 percent, by weight, of a thermoplastic or partially  
thermoplastic polymer or elastomer, from about 0.5 to  
about 35 percent, by weight, of an unsaturated  
polyester resin or vinyl ester resin, and about 20 to  
10 about 80 percent of an alkyl acrylate or methacrylate  
monomer.
2. A polymerizable adhesive or filling composition  
for large assemblies comprising from about 10 to about  
60 percent by weight of a thermoplastic or partially  
15 thermoplastic polymer or elastomer, from about 1 to  
about 25 percent by weight of an unsaturated polyester  
resin or vinyl ester resin, and about 30 to about 80  
percent of an alkyl acrylate or methacrylate monomer.
3. A polymerizable adhesive or filling composition  
20 for large assemblies comprising from about 15 to about  
50 percent by weight of a thermoplastic or partially  
thermoplastic polymer or elastomer, from about 2 to  
about 20 percent by weight of an unsaturated polyester  
resin or vinyl ester resin, and about 40 to about 70  
25 percent of an alkyl acrylate or methacrylate monomer.
4. The polymerizable adhesive or filling composition  
of Claim 1 wherein the thermoplastic or partially

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thermoplastic polymer comprises a core-shell polymer or impact modifier.

5. The polymerizable adhesive or filling composition of Claim 1 wherein the thermoplastic or partially thermoplastic polymer comprises a thermoplastic resin or mixtures of resins.

6. The polymerizable adhesive or filling composition of Claim 1 wherein the thermoplastic or partially thermoplastic polymer comprises an elastomer or mixture of elastomers and a core-shell polymer or impact modifier.

7. The polymerizable adhesive or filling composition of Claim 1 wherein the thermoplastic or partially thermoplastic polymer or elastomer is selected from the group consisting of a nitrile elastomer, a liquid nitrile polymer, a polymer or copolymer of chloroprene, acrylonitrile, styrene, butadiene, isoprene, ethylene, propylene, epichlorohydrine, an acrylate or methacrylate monomer, a chlorinated polymer or elastomer, a chlorinated polyethylene or ethylene copolymer, chlorosulfonated polyethylene or ethylene copolymer, and mixtures thereof.

8. The polymerizable adhesive or filling composition of Claim 4 further comprising a thermoplastic or partially thermoplastic polymer or elastomer selected

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from the group consisting of a nitrile elastomer, a liquid nitrile polymer, a polymer or copolymer of chloroprene, acrylonitrile, styrene, butadiene, isoprene, ethylene, propylene, epichlorohydrine, an acrylate or methacrylate monomer, a chlorinated polymer or elastomer, a chlorinated polyethylene or ethylene copolymer, chlorosulfonated polyethylene or ethylene copolymer, and mixtures thereof.

9. The polymerizable adhesive or filling composition of Claim 4 further comprising a thermoplastic or partially thermoplastic polymer or elastomer selected from the group consisting of a nitrile elastomer, a liquid nitrile polymer a polymer or copolymer of chloroprene, a chlorinated polymer or elastomer, acrylonitrile, styrene, butadiene, isoprene, ethylene-propylene, an acrylate or methacrylate monomer, a chlorinated polyethylene or ethylene copolymer, chlorosulfonated polyethylene or ethylene copolymer, and mixtures thereof and also further comprising a thermoplastic resin or mixture of resins.

10. The polymerizable adhesive or filling composition of Claim 1 wherein the alkyl acrylate or methacrylate monomers comprise a C1-C6 acrylate or methacrylate monomer selected from the group consisting of methyl methacrylate, ethyl methacrylate, hydroxyethyl

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methacrylate, propyl methacrylate, hydroxypropyl  
methacrylate, butyl methacrylate, hexamethyl  
methacrylate, hexyl methacrylate, cyclohexyl  
methacrylate, methyl acrylate, ethyl acrylate  
5 hydroxyethyl acrylate, propyl acrylate, hydroxypropyl  
acrylate, butyl acrylate, hexyl acrylate, cyclohexyl  
methacrylate, or mixtures thereof.

11. The polymerizable adhesive or filling composition  
of Claim 1 wherein the thermoplastic or partially  
10 thermoplastic polymer is selected from the group  
consisting of a blend of two or more thermoplastic or  
partially thermoplastic polymers, a blend of two or  
more elastomers, or at least one elastomer and at least  
one thermoplastic or partially thermoplastic polymer or  
15 mixtures thereof.

12. The polymerizable adhesive or filling composition  
of Claim 4 wherein the core-shell polymer or impact  
modifier is selected from the group consisting of ABS,  
MABS, MBS, and or all-acrylic and mixtures thereof.

20 13. The polymerizable adhesive or filling composition  
of Claim 1 wherein the thermoplastic polymer is  
selected from the group consisting of polystyrene,  
acrylic, styrene/acrylic, styrene/acrylonitrile, ABS,  
MABS, and polyvinyl chloride and mixtures thereof.

25 14. The polymerizable adhesive or filling composition

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of Claim 6 wherein the elastomer or mixture of elastomers is selected from the group consisting of soluble or lightly crosslinked polychloroprene, chlorinated polyethylene, chlorosulfonated polyethylene, epichlorohydrine, polymers or copolymers, styrene-butadiene and styrene-isoprene polymers and block copolymers, soluble, lightly crosslinked or liquid polymers of acrylonitrile, butadiene and isoprene, acrylic, ethylene acrylic elastomers, and mixtures thereof.

15. The polymerizable adhesive or filling composition of Claim 11 wherein the thermoplastic polymer is selected from the group consisting of polystyrene, acrylic, styrene/acrylic, styrene/acrylonitrile, ABS, MABS, chlorinated polyethylene, and polyvinyl chloride and mixtures thereof.

16. The polymerizable adhesive or filling composition of Claim 11 wherein the elastomer or mixture of elastomers is selected from the group consisting of soluble or lightly crosslinked polychloroprene, chlorinated polyethylene, chlorosulfonated polyethylene, epichlorohydrine, polymers or copolymers, styrene-butadiene and styrene-isoprene polymers and block copolymers, soluble, lightly crosslinked or liquid polymers of acrylonitrile,

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butadiene and isoprene, acrylic, ethylene acrylic elastomers, and mixtures thereof.

17. The polymerizable adhesive or filling composition of Claim 1 wherein the unsaturated polyester or vinyl ester resin is selected from the group consisting of unsaturated orthophthalic, isophthalic, terephthalic, and dicyclopentadiene polyester resins, vinyl ester resins, halogenated polyester resins, halogenated vinyl ester resins, and mixtures thereof.

18. The polymerizable adhesive or filling composition of Claim 1 further comprising from about 0.01 to about 20 percent by weight of a polymerizable organic acid monomer or oligomer.

19. The polymerizable adhesive or filling composition of Claim 18 wherein the polymerizable organic acid monomer comprises methacrylic acid or acrylic acid or mixtures thereof.

20. The polymerizable adhesive or filling composition of Claim 18 wherein the polymerizable organic acid monomer is selected from the group consisting of maleic acid, fumaric acid, itaconic acid and mixtures thereof.

21. The polymerizable adhesive or filling composition of Claim 18 wherein the polymerizable organic acid monomer or oligomer comprises a vinyl substituted

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phosphate ester.

22. The polymerizable adhesive or filling composition of Claim 1 further comprising from about 0.1 to about 10 percent by weight of a viscosity control agent.
- 5 23. The polymerizable adhesive or filling composition of Claim 1 further comprising one or more materials selected from the group consisting of catalysts, initiators, reducing agents, activators, and promoters and mixtures thereof.
- 10 24. The polymerizable adhesive or filling composition of Claim 1 further comprising a chlorosulfonated polymer, an organic sulfonyl chloride and a dihydropyridine.
- 15 25. The polymerizable adhesive or filling composition of Claim 1 further comprising a hydroperoxide, a dione or other chelator, an organometallic salt and an aromatic amine.